

1 I Claim:

2 1. A method of forming a box having a plurality of corner
3 gussets comprising the steps:

4
5 providing a generally planar box blank having a base wall, four
6 side walls and four gusset corner formation wall sections each
7 having upper and lower portions, said four gusset corner
8 formation wall sections extending from and connected to at
9 least two of said side walls;

10
11 providing a box forming device including a gusset formation section
12 having at least one kicker plate, at least one forming blade
13 and at least one adhesive securement means;

14
15 feeding said box blank into said box forming device;

16
17 deflecting each of said gusset corner formation wall sections to a
18 generally perpendicular orientation relative to said base wall
19 via said at least one kicker plate;

20
21 bending said upper portion of each of said gusset corner formation
22 wall sections towards a connected one of said side walls via
23 said at least one forming blade such that said upper and lower
24 portions of said gusset corner formation wall section form an
25 acute angle therebetween;

26
27 securing a glue flap section of said upper portion of each of said
28

1 gusset corner formation wall sections to said connected one of
2 said side walls via said at least one adhesive securement
3 means thereby securing said upper and lower portions of said
4 gusset corner formation wall section to form a gusset;

5
6 folding said side walls upwards generally perpendicular to said
7 base wall;

8
9 securing adjacent ones of said side walls to one another whereby
10 said box is formed.

2. In combination:

a generally planar box blank having a base wall, four side walls and four gusset corner formation wall sections each having upper and lower portions, said four gusset corner formation wall sections extending from and connected to at least two of said side walls; and

a box forming device including a gusset formation section having at least one kicker plate, at least one forming blade, at least one slot generally adjacent said at least one forming blade for receiving said lower portion of said gusset corner formation wall section and at least one adhesive securement means;

said box forming device operative to engage said box blank with said at least one kicker plate engaging one of said gusset corner formation wall sections and bending said one of said gusset corner formation wall sections generally perpendicular with said base wall;

said at least one slot operative to receive said lower portion of said one of said gusset corner formation wall section and restrict bending thereof;

said at least one forming blade operative to engage said upper portion of said one of said gusset corner formation wall

1 section and bend said upper portion relative to said lower
2 portion such that said upper and lower portions of said gusset
3 corner formation wall section form an acute angle
4 therebetween;

5
6 said at least one adhesive securement means operative to secure a
7 glue flap section of said upper portion of said one of said
8 gusset corner formation wall sections to a connected one of
9 said side walls thereby securing said upper and lower portions
10 of said gusset corner formation wall section to form a gusset;
11 and

12
13 said at least one kicker plate, at least one forming blade, at
14 least one slot cooperating to form gussets with each of said
15 gusset corner formation wall sections.

16
17 **3.** The combination of claim 2 wherein said at least one
18 forming blade comprises a forwardly extending curved engagement
19 section curved to engage an outer face of said gusset corner
20 formation wall sections, a center curved deforming section
21 operative to bend said upper portion of said gusset corner
22 formation wall section and a rear section operative to press the
23 formed gusset onto one of said side walls to which said gusset
24 corner formation wall section is connected.

25
26 **4.** The combination of claim 2 wherein said at least one
27 adhesive securement means comprises a pair of glue compression
28

1 rollers operative to engage a respective glue flap section of said
2 upper section of said gusset corner formation wall section to
3 secure said glue flap section to the connected side wall to
4 complete formation of the corner gusset.

5
6 **5.** The combination of claim **2** further comprising at least
7 one kicker wheel mounted adjacent said at least one kicker plate,
8 said kicker wheel operative to alternatively engage and disengage
9 said at least one kicker plate to move said at least one kicker
10 plate between a bending position and a disengaged position, thereby
11 only bending said gusset corner formation wall sections of said box
12 blank into a generally perpendicular orientation relative to said
13 base wall and permitting other sections of said box blank to pass
14 free of engagement.